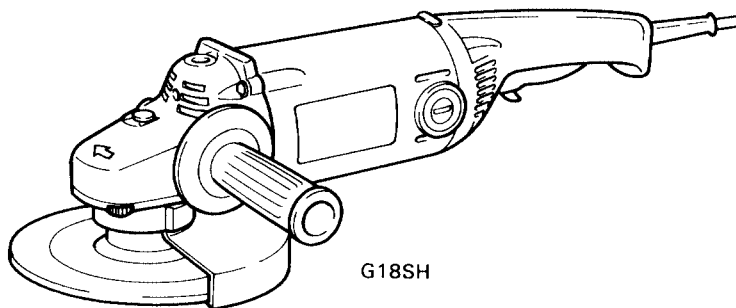


HITACHI

DISC GRINDER WINKELSCHLEIFER MEULEUSE SMERIGLIATRICE ANGOLARE HAAKSE SLIJPMACHINE AMOLADORA ANGULAR

**G 18SH • G 18U • G 18SE2 • G 18UA
G 18SG • G 18UB • G 23SF • G 23U
G 23SC2 • G 23UA • G 23SE • G 23UB**



G18SH

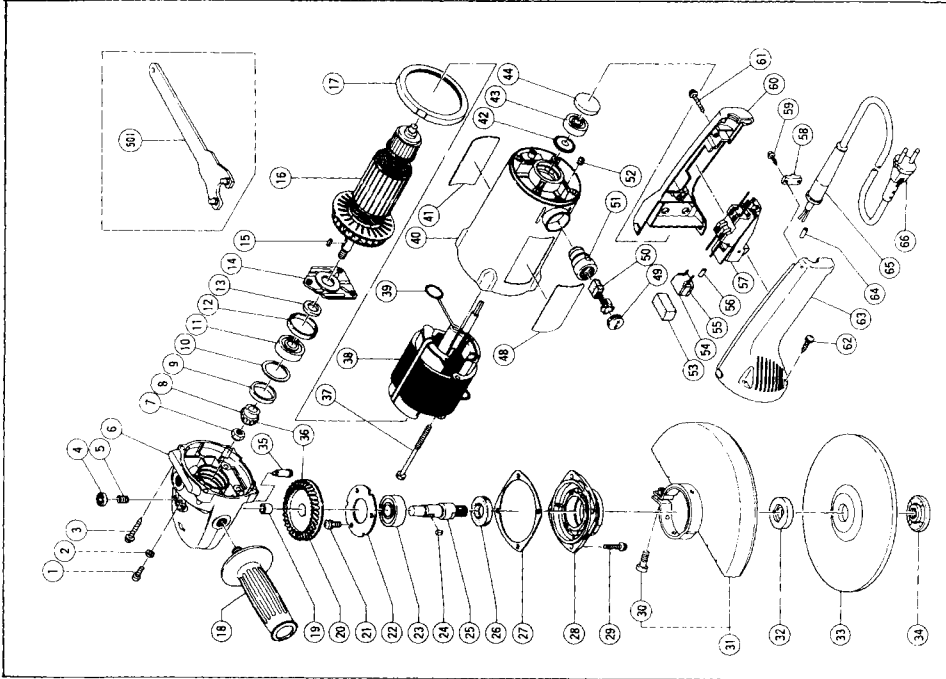
Read through carefully and understand these instructions before use.
Diese Anleitung vor Benutzung des Werkzeugs sorgfältig durchlesen und verstehen.
Lire soigneusement et bien assimiler ces instructions avant usage.
Prima dell'uso leggere attentamente e comprendere queste istruzioni.
Deze gebruiksaanwijzing s.v.p. voor gebruik zorgvuldig doorlezen.
Leer cuidadosamente y comprender estas instrucciones antes del uso.



**Handling instructions
Bedienungsanleitung
Mode d'emploi
Istruzioni per l'uso
Gebruiksaanwijzing
Instrucciones de manejo**

	English	Deutsch	Francais
①	Brush cap	Bürstendeckel	Capot de balai
②	Socket for side handle	Sockel für Seitengriff	Douille pour poignée latérale
③	Push button (Spindle lock)	Druckknopf (Sperrplatte)	Bouton-poussoir (blocage d'arbre)
④	Spindle	Spindel	Arbre
⑤	Screw	Schraube	Vis
⑥	Wheel guard	Schutzhaube	Couvre-meule
⑦	Wheel washer	Unterlegscheibe	Rondelle de la meule
⑧	Grinding wheel	Schleifscheibe	Meule
⑨	Wheel nut	Mutter für die Schleifscheibe	Ecrou de la meule
⑩	Wrench	Schlüssel	Clef
⑪	Diamond wheel	Diamantscheibe	Disque diamant
⑫	Side handle	Handgriff	Poignée latérale
⑬	Lock botton	Sperrknopf	Touch de verrouillage
⑭	Switch	Schalter	Interrupteur
⑮	Wear limit	Verschleißgrenze	Limite d'usure
⑯	No. of carbon brush	Nr. der Kohlebürste	No. du balai en carbone
⑰	Usual carbon brush	Gewöhnliche Kohlebürste	Balai en carbone ordinaire
⑱	Auto-stop carbon brush	Auto-Stop Kohlebürste	Balai en carbone à arrêt automatique

	Italiano	Nederlands	Español
①	Cappuccio della spazzola	Borstelkap	Tapa de la escobilla
②	Presa per l'impugnatura laterale	Bevestigingspunt voor zijhandgreep	Rosca para el asa lateral
③	Tasto di blocco dell'asse	Drukknop (as-vergrendeling)	Botón pulsador (Bloqueo del eje)
④	Asse	As	Eje
⑤	Vite	Schroef	Tornillo
⑥	Carter della mola	Beschermkap	Cubierta protectora de muela
⑦	Rondella "grover"	Onderlesqchijf	Arandela molar
⑧	Mola	Schuurschijf	Muela de alisado
⑨	Dado ad anello	Moer voor de schuurschijf	Contratuercas molar
⑩	Chiave	Sleutel	Llave para tuercas
⑪	Disco diamantata	Diamantzaagblad	Adiamantado
⑫	Impugnatura laterale	Handgreep	Asidero lateral
⑬	Tasto di blocco	Vergrendelknop	Botón de seguridad
⑭	Interruttore	Schakelaar	Conmutador
⑮	Límite di usura	Slijtagegrens	Límite de uso
⑯	N. della spazzola di carbone	Nr. van de koolborstel	No. de carbón de contacto
⑰	Spazzola di carbone comune	Normale koolborstel	Escobilla de carbón usual
⑱	Spazzola di carbone ad arresto automatico	Auto-stop koolborstel	Escobilla de carbón de parada automática



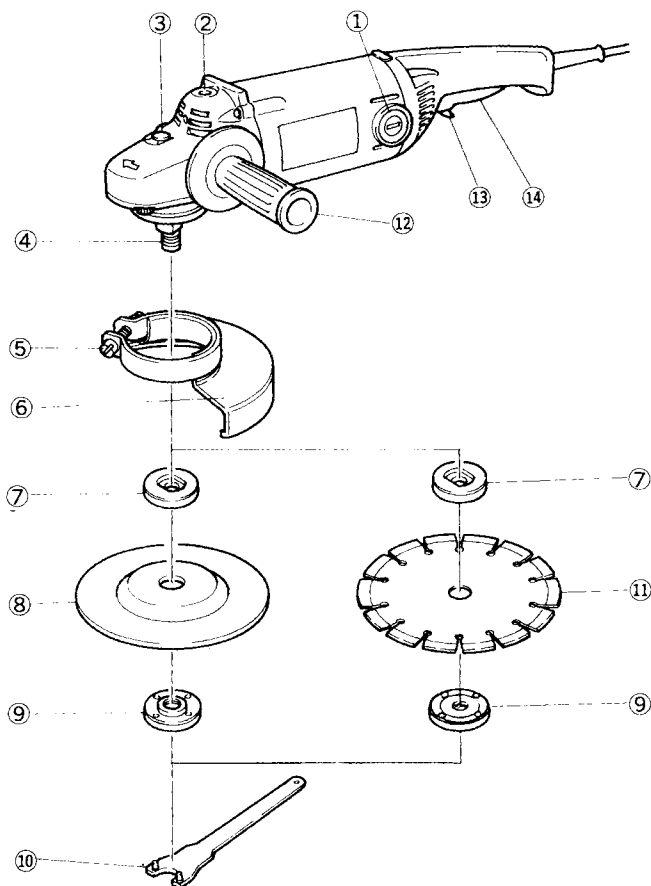
G23SC2

Item No.	Part Name
1	Machine Screw M5×14
2	Spring Washer M5
3	Tapping Screw (W/Flange) D5×35
4	Push Button
5	Spring
6	Gear Cover Ass'y
7	U-Nut M8
8	Pinion
9	Seal Ring (A)
10	Washer (A)
11	Ball Bearing (6301DDUCMPS2S)
12	Rubber Ring (B)
13	Felt Packing (A)
14	Bearing Cover
15	Feather Key 3×3×10
16	Armature
17	Fan Guide
18	Side Handle For M14
19	Needle Bearing (HK1212)
20	Gear
21	Seal Lock Screw (W/Sp. Washer) M5×10
22	Bearing Cover (B)
23	Ball Bearing (6302DDUCMPS2S)
24	Feather Key 4×4×8
25	Spindle
26	Felt Packing (B)
27	Seal Plate
28	Packing Gland
29	Hex. Socket Hd. Bolt (W/Flange) M5×16
30	Bolt M8×22
31	Wheel Guard Ass'y
32	Wheel Washer (A)
33	D. C. Wheels 230MM A24R
34	Wheel Nut
35	Lock Pin
36	Gear Ass'y

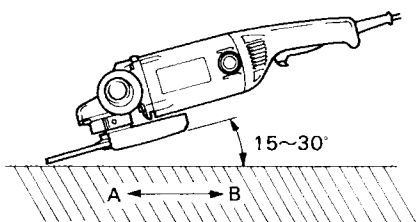
Item No.	Part Name
37	Hex. Hd. Tapping Screw D5×75
38	Stator Ass'y
39	Brush Terminal
40	Housing Ass'y
41	Name Plate
42	Dust Seal (A)
43	Ball Bearing (6200VVCMP52S)
44	Rubber Ring (D)
48	HITACHI Label
49	Brush Cap
50	Carbon Brush
51	Brush Holder
52	Hex. Socket Set Screw M5×8
53	Dust Packing
54	Support (B)
55	Nois Suppressor
56	Tuba (D)
57	Switch
58	Cord Clip
59	Tapping Screw (W/Flange) D4×16
60	Handle (B)
61	Tapping Screw (W/Flange) D4×25
62	Tapping Screw (W/Flange) D5×25
63	Handle (A)
64	Tube (D)
65	Cord Armor
66	Cord
501	Wrench

Parts are subject to possible modification without notice due to improvement.
The drawing and the list are parts structural drawing and parts list of model G23SC2.
For other models refer to the drawing and the list.

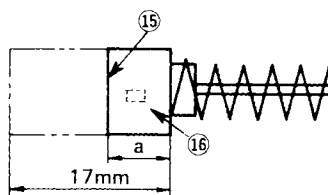
1



2



3



	15	a
17	44	6mm
18	43Z	7mm

GENERAL OPERATIONAL PRECAUTIONS

1. Keep work area clean. Cluttered areas and benches invite injuries.
2. Consider work area environment. Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit. Don't use tool in presence of flammable liquids or gases.
Power tools produce sparks during operation. They also spark when switching ON/OFF. Never use power tools in dangerous sites containing lacquer, paint, benzine, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.
3. Guard against electric shock. Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
4. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
5. Store idle tools. When not in use, tools should be stored in dry and high or locked-up place-out of reach of children.
6. Don't force tool. It will do the job better and safer at the rate for which it was intended.
7. Use right tool. Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended—for example—don't use circular saw for cutting tree limbs or logs.
8. Dress properly. Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
9. Use eye protection. Also use face or dust mask if cutting operation is dusty.
10. Don't abuse cord. Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil and sharp edges.
11. Secure work. Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
12. Don't overreach. Keep proper footing and balance at all times.
13. Maintain tools with care. Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.
14. Disconnect tools. When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. Remove adjusting keys and wrenches. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. Avoid unintentional starting. Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. Outdoor use extension cords. When tool is used outdoors, use only extension cords intended for use outdoors and so marked.

18. Stay alert. Watch what you are doing. Use common sense. Do not operate tool when you are tired.
19. Check damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Do not use tool if switch does not turn it on and off.
20. Use the power tools only for applications specified in the Handling Instructions.
21. To avoid personal injury, use only the accessories or attachment recommended in these handling instructions or in the HITACHI catalog.
22. Let only the authorized service facility do the repairing.
The manufacturer will not be responsible for any damages or injuries caused by repair by unauthorized persons or by mishandling of the tool.
23. To ensure the designed operational integrity of power tools, do not remove installed covers or screws.
24. Do not touch movable parts or accessories unless the power source has been disconnected.
25. Use your tool at lower input than specified on the nameplate; otherwise, the finish may be spoiled and working efficiency reduced by motor overload.
26. Do not wipe plastic parts with solvent. Solvents such as gasoline, thinner, benzene, carbon tetrachloride, alcohol, ammonia and oil containing chloric annex may damage and crack plastic parts. Do not wipe them with such solvent. Wipe plastic parts with a soft cloth lightly dampened with soapy water.
27. Use only original HITACHI replacement parts.
28. Disassemble this tool only for replacement of carbon brushes.
29. Use the exploded assembly drawing on this handling instructions only for authorized servicing.

PRECAUTIONS ON USING DISC GRINDER

1. Never operate these power tools without Wheel Guards.
2. Use only grinding wheels with a "Safe Speed" of at least as high as the "No-Load RPM" indicated on the power tool nameplate.
3. Always hold the body handle and side handle of the power tool firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.
4. Never depress the push button while the spindle is turning.

SPECIFICATIONS

Model		G18SH	G18U	G18SE2	G18UA	G18SG	G18UB	G23SF	G23U	G23SC2	G23UA	G23SE	G23UB
Voltage (by areas)*1		(110V, 115V, 120V, 127V, 220V, 230V, 240V)~											
Input*1		2000W		2200W		2400W		2000W		2200W		2400W	
No-load speed		8500/min						6600/min					
Wheel	Outer dia.	180mm						230mm					
	Inner diam.	22mm											
	Peripheral speed	4800m/min											
Weigh*2		4.3kg		5.0kg				4.3kg		5.0kg			
Starting current limiter*3		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

*1 Be sure to check the nameplate on product as it is subject to change by areas.

*2 Weight: Only main body

*3 The starting current limiter produces the starting current to such an extent that a fuse (16A, slow-blow) is not tripped.

STANDARD ACCESSORIES

- (1) Wrench 1
(2) Side Handle 1

Grinding wheels are not provided as standard accessories.

Standard accessories are subject to change without notice.

APPLICATIONS

- Removal of casting fin and finishing of various types of steel, bronze and aluminum materials and castings.
- Grinding of welded sections or sections cut by means of a cutting torch.
- Grinding of synthetic resins, slate, brick, marble, etc.
- Cutting of synthetic concrete, stone, brick, marble, and similar materials.

PRIOR TO OPERATION

1. Power source

Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.

2. Power switch

Ensure that the power switch is in the OFF position. If the plug is connected to a power receptacle while the power switch is in the ON position, the power tool will start operating immediately, which could cause a serious accident.

3. Extension cord

When the work area is removed from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.

4. Fitting and adjusting the wheel guard

The wheel guard is a protective device to prevent injury should the grinding wheel shatter during operation. Ensure that the guard is properly fitted and fastened before commencing grinding operation. By slightly loosening the setting screw, the wheel guard can be turned and set at any desired angle for maximum operational effectiveness.

Ensure that the setting screw is thoroughly tightened after adjusting the wheel guard.

5. Ensure that the grinding wheel to be utilized is the correct type and free of cracks or surface defects. Also ensure that the grinding wheel is properly mounted and the wheel nut is securely tightened. Refer to the section on "Grinding Wheel Assembly".

6. Conducting a trial run

Before commencing grinding operation, the machine should be given a trial run in a safe area to ensure that it is properly assembled and that the grinding wheel is free from obvious defects.

Recommended trial run durations are as follows:
After replacing grinding wheel

..... 3 minutes or more

Prior to starting routine work

..... 1 minutes or more

7. Confirm the spindle lock mechanism.

Confirm that the spindle lock is disengaged by pushing push button two or three times before switching the power tool on (See **Fig. 4**)

8. Fixing the side handle.

Screw the side handle into the gear cover.

PRACTICAL GRINDER APPLICATION

1. Pressure

To prolong the life of the machine and ensure a first class finish, it is important that the machine should not be overloaded by applying too much pressure. In most applications, the weight of the machine alone is sufficient for effective grinding. Too much pressure will result in reduced rotational speed, inferior surface finish, and overloading which could reduce the life of the machine.

2. Grinding angle

Do not apply the entire surface of the grinding wheel to the material to be ground. As shown in **Fig. 2**, the machine should be held at an angle of 15°-30° so that the external edge of the grinding wheel contacts the material at an optimum angle.

3. To prevent a new grinding wheel from digging into the workpiece, initial grinding should be performed by drawing the grinder across the workpiece toward the operator (**Fig. 2 direction B**). Once the leading edge of the grinding wheel is properly abraded, grinding may be conducted in either direction.

4. Switch operation

Switch ON: Push the locking button forwards and then press the switch lever.

* For continuous use, press the switch lever. The switch lever is locked by pushing the locking button forwards once again.

(* Subject to change depending on area.)

Switch OFF: Press and release the switch lever.

5. Precautions immediately after finishing operation

After switching off the machine, do not put it down until the grinding wheel has come to a complete stop. Apart from avoiding serious accidents, this precaution will reduce the amount of dust and swarf sucked into the machine.

CAUTION

When the machine is not in use, the power source should be disconnected.

GRINDING WHEEL ASSEMBLY

1. Assembling (Fig. 1)

- (1) Turn the machine upsidedown so that the spindle is facing upward.
- (2) Mount the wheel washer onto the spindle.
- (3) Fit the protuberance of the grinding wheel or diamond wheel onto the wheel washer.
- (4) Screw the wheel nut onto the spindle.
(For diamond wheel assembling, use the wheel nut with the convex side against the diamond wheel.)
- (5) Insert the push button to prevent rotation of the spindle, and tighten the wheel nut with accessory wrench, as shown in **Fig. 1**.

2. Disassembly

Follow the above procedures in reverse.

MAINTENANCE AND INSPECTION

1. Inspecting the grinding wheel

Ensure that the grinding wheel is free of cracks and surface defects.

2. Inspecting the mounting screws:

Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.

3. Inspecting the carbon brushes (Fig. 3)

The Motor employs carbon brushes which are consumable parts.

When they become worn to or near the "wear limit", it could result in motor trouble. When an auto-shop carbon brush is equipped, the motor will stop automatically.

At that time, replace both carbon brushes with new ones which have the same carbon brush Numbers shown in the figure. In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.

4. Replacing a carbon brush:

Disassemble the brush cap with a minus-head screwdriver. The carbon brush can then be easily removed.

5. Maintenance of the motor

The motor unit winding is the very "heart" of the power tool. Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.

NOTE

Due to HITACHI's continuing program of research and development, the specifications herein are subject to change without prior notice.

This appliance is produced to conform to the requirements of B.S. 800: 1977.

This requirement is applicable to appliances for THE UNITED KINGDOM.

IMPORTANT

Correct connection of the plug

The wires of the main lead are coloured in accordance with the following code:

Blue: -Neutral

Brown: -Live

As the colours of the wires in the main lead of this tool may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire coloured blue must be connected to the terminal marked with the letter N or coloured black. The wire coloured brown must be connected to the terminal marked with the letter L or coloured red. Neither core must be connected to the earth terminal.

NOTE

This requirement is provided according to BRITISH STANDARD 2769: 1984.

Therefore, the letter code and colour code may not be applicable to other markets except The United Kingdom.

The noise emitted by this power tool is measured in accordance with IEC 59 (CO) 11, IEC 704, DIN 45 635 Part 21, NFS 31-031 (84/537/EEC for concrete breakers). The sound pressure level at the workplace can exceed 85 dB (A); in this case noise protection for the operator is required.